



INSTRUCTION MANUAL

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CW-37

Century Wood product inc
932 W Washington
Chicago, Ill.

1 model Sa 321
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(FZ 60980)

{ F.M.K. }
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CONTENTS

FOREWORD	
GETTING FAMILIAR WITH YOUR MACHINE	1
TWELVE STANDARD CAMS FOR ZIG-ZAG AND DECORATIVE SEWING	2
THESE ARE YOUR ACCESSORIES AND ATTACHMENTS	3
SPECIAL FEATURES	4
	5~6

PART 1 HOW TO SEW

STRAIGHT SEWING	7
ZIG-ZAG AND DECORATIVE SEWING	7
INSERTING AND REMOVING THE CAM	8
MOVING THE ZIG-ZAG WIDTH LEVER	9
NEEDLE POSITION DIAL	9~10

PART 2 PREPARING TO SEW

INSERTING THE NEEDLE	11
HOW TO THREAD THE MACHINE	11
WINDING THE BOBBIN	12
THIS IS HOW YOU THREAD THE BOBBIN CASE	13
THIS IS HOW YOU PLACE AND REMOVE THE BOBBIN CASE	14
SNAP-OPEN RACE IS EASY TO CLEAN	15
GETTING READY TO SEW	16
COMMENCING TO SEW	16
TO REMOVE THE WORK	17
REGULATING THE THREAD TENSION	17

TO REGULATE THE PRESSURE OF THE PRESSER FOOT	18
DROP FEED DIAL	19
REGULATING THE STITCH LENGTH AND PUSH-BUTTON REVERSE SEWING	19
BUILT-IN LIGHT	20
SOME USEFUL SEWING HINTS	21
CAUSES OF COMMON DIFFICULTIES	22
TO OIL YOUR SEWING MACHINE	23
NEEDLE AND THREAD SIZES	24

PART 3 SEWING WITH ATTACHMENTS

STRAIGHT SEWING PRESSER FOOT AND NEEDLE PLATE	25
DOUBLE NEEDLE	25
ZIG-ZAG SEWING PRESSER FOOT	26
BUTTON SEWING PRESSER FOOT	27
BUTTONHOLE SEWING PRESSER FOOT	28
HEMMING PRESSER FOOT	29
FOLDING PRESSER FOOT	30
CORDING PRESSER FOOT	31
STRAIGHT GUIDE	31
QUILTER	32
STITCH RIPPER	33
EMBROIDERING SPRING	34
ZIG-ZAG SEWING MACHINE PARTS	35~41

FOREWORD

Congratulations! You have just made an excellent choice in buying this machine. Actually, you have acquired two separate sewing machines in one. Why?

We can presume that you will be sewing straight stitches most of the time, so we wanted, first of all, to give you a perfect straight sewing machine. This machine, in spite of the fact that it is a full automatic zig-zag machine, will sew as straight a line of seam as any straight sewer will. This is because, when it is set for plain sewing, the needle bar altogether disengages itself from the zig-zag mechanism and is held rigid enough to assure you of the best results in this type of sewing.

The other part of the two-in-one bargain is the full automatic feature. By putting in the machine one of the twelve cams provided with it or any other cam which you may wish to purchase in addition to the first dozen, and setting the machine for zig-zag sewing, you will have at your command a dream machine, capable of sewing for you many beautiful zigzag and decorative stitches. Unlike most of the zig-zag machines, this one is very simple and easy to operate. It is just a matter of minutes for you to learn the basic steps to use it. So, we want you think of it as such and have you begin sewing with it right away.

You will find in the following pages instructions and hints which will be necessary for you to get the most out of your new automatic zig-zag sewing machine. Please read them carefully.

Let us compliment you again for your wisdom in choosing this machine. We sincerely hope that you will enjoy many years of sewing pleasure with it.

GETTING FAMILIAR WITH MACHINE

1. Darning
2. Darning release
3. Arm thread guide
4. 4' Spool pin
5. Bobbin winder
6. Balance wheel
7. Reverse sewing push-button
8. Stitch length window
9. Stitch length regulating dial knob
10. Stitch length regulating dial window
11. Bobbin winder thread guide
12. Drop feed dial knob
13. Cam housing door
14. Cam housing door button
15. Zig-Zag width window
16. Zig-Zag width lever
17. Needle position dial knob
18. Needle position dial window
19. Check spring
20. Upper thread tension regulator
21. Thread retainer
22. Needle bar
23. Needle
24. Shuttle race
25. Hinged plate
26. Needle plate
27. Presser foot



Fig. 1

28. Presser bar
29. Presser bar lifter
30. Light switch
31. Thread take up lever

TWELVE STANDARD CAMS FOR ZIG-ZAG AND DECORATIVE SEWING

Besides these twelve standard cams (Fig. 2) twelve others (Nos. 13-24) are available at extra cost.

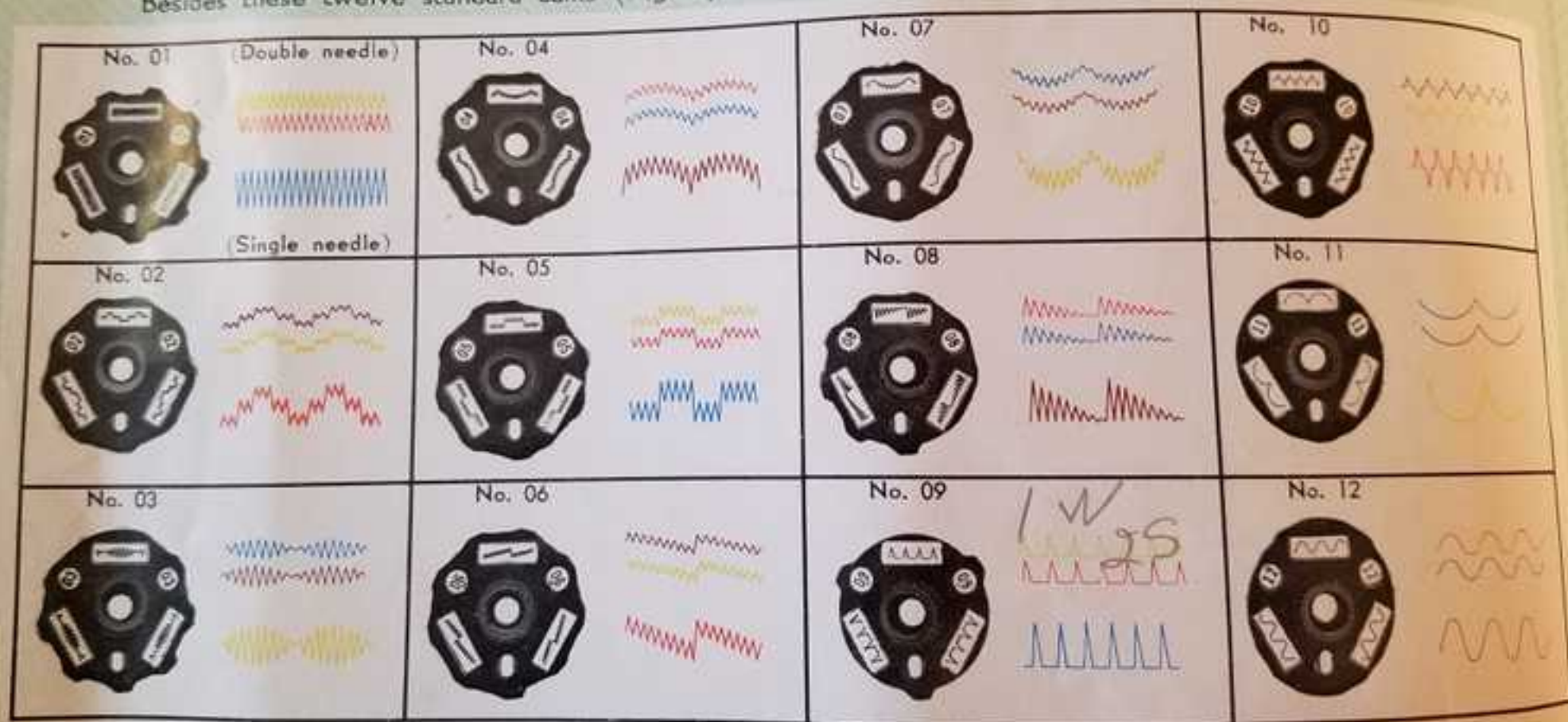


Fig.—2

THESE ARE YOUR ACCESSORIES AND ATTACHMENTS

Parts Name :	Quantity per set :
1. Stitch ripper	1
2. Needle (#11)	3
Needle (#14)	2
3. Double needle (#11)	1
4. Oil can	1
5. Oil bottle	1
6. Screw driver (Large)	1
7. Screw driver (Small)	1
8. Bobbin	6
9. Light Bulb	2
10. Straight guide	1
11. Straight sewing presser foot.....	1
12. Hemming presser foot (Large) ...	1
13. Hemming presser foot (Small) ...	1
14. Straight guide screw	1
15. Quilter	1
16. Buttonhole sewing presser foot ...	1



Fig.—3

17. Button sewing presser foot	1
18. Cording presser foot	1
19. Straight sewing needle plate	1
20. Accessory box	1

SPECIAL FEATURES

Here are features which makes your machine one with outstanding advantages.

Accurate Sewing Since it is impractical for you to own one machine for straight sewing and another for Automatic Zig-Zag sewing, your machine must do both, perfectly. Years of engineering development went into this machine to assure you of the most perfect straight stitching performance, and excellence in Automatic Zig-Zag performance as well.

Double Needle Sewing This amazing feature enables you to use the "twin" needle and enables you to use various thread, with almost limit-less beautiful effects.

Precise Patterns The machine is so constructed that it repeats each consecutive design with precisely the same number of stitches.

This will especially please you when you want your decorative stitches to be clearcut and exact.

Simple Operation To make this machine simple to operate was one of the chief objective of the designers. Basically, you have only three simple operations more to learn than when sewing straight stitches; inserting the needle, regulating the zig-zag width lever, and controlling the needle position dial.

Quietness The shuttle race of this machine does not move with each swing of the needle bar, as is the case with ordinary zig-zag machines.

Thus it is quieter and has less vibration.

Durability For the same reason, you have a more durable machine. Your machine will last longer, because it has fewer moving parts, and consequently, less wear-and-tear.

Pattern Variations As the width of the zig-zag stitch can be changed freely or continuously by moving the zig-zag stitch lever, a wide variety of designs can be sewn even with the same cam.

Smart Design Note the smart lines of this modern machine, and especially how all the levers are placed for ease in operational handling.

Match-o-matic Darter It enables you to get the exact amount of pressure you desire according to the kind of material you are sewing.

Stitch Regulator With this, you regulate your stitch length for forward and reverse sewing in one motion, easily and accurately.

Reverse Sewing Push-Button Reverse sewing is executed the push-button way.

Automatic Bobbin Winder It winds your bobbin and stops automatically when your bobbin is filled.

Calibrated Upper Thread Tension Regulator This aids you to control upper thread tension easily and accurately, according to thread and material differences.

Drop Feed Dial You regulate the level of the feed dog just by turning the dial knob.

Built-In Light It illuminates your work for better and efficient sewing. There is no glare. Light bulb is easily changed.

Snap-Out Race Quickly and easily taken apart to enable you to remove accumulated lint or threads.

Floating Presser Foot Permits sewing over pins and heavy seams without the necessity of having to help the material along by hand.

Part 1 How To Sew

If you are familiar with a modern sewing machine you may immediately try to sew with this machine by following the instructions below. It is not difficult for you to prepare the machine for sewing. If you encounter any difficulty in threading the machine, setting the upper thread tension or stitch length controls, winding the bobbin, etc., you may turn for help to Part 2. Use the Table of Contents for quick location of pages.

However, if you feel it necessary to thoroughly familiarize yourself with the preliminary steps of preparing to sew, please read Part 2 first. You can turn back to this page again after doing so.

STRAIGHT SEWING

There are only two things to do to set your machine for straight sewing. One is to move the zig-zag width lever to the extreme right or at position '0' in the dial window. By doing so, no matter what cam you have in the machine, you will be ready for plain sewing. The other is to turn the needle position dial knob to center or, so that  will show in the window. (Fig. 4) Try it now. You will see how simple it is to transform this machine from a zig-zag to a straight sewer.

ZIG-ZAG AND DECORATIVE SEWING

For zig-zag and decorative sewing, insert a cam in the machine, move zig-zag width lever to any one of its five positions, and set needle to any one of its three positions, then, sew. For plain zig-zag sewing, use cam No. 01; and for other decorative stitches, cam No. 02~12 or any others purchased separately. Let us study these operations one by one.

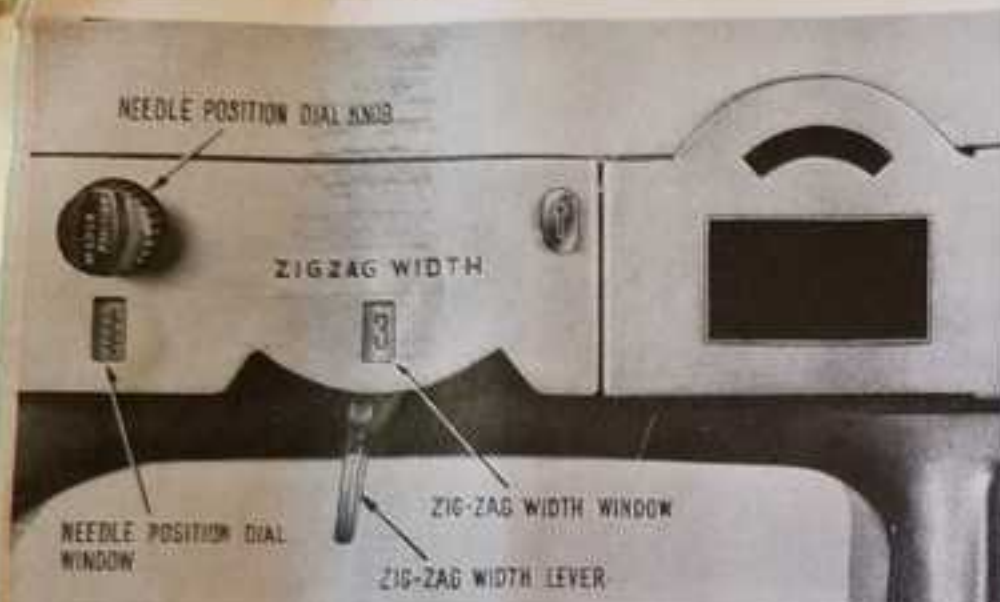


Fig.—4

INSERTING AND REMOVING THE CAM

First of all, whenever inserting or removing cams, **always move zig-zag width lever to '0' or to the far right.**

Open the cam housing door by lightly pressing the cam housing door button in the direction of the arrow.

Pick up cam by its knurled funnel end and mount onto the cam spindle in the cam housing. Fit pin on the cam spindle pedestal through second hole of the cam. Press the cam in all the way. To take the cam out, simply pull it out by knurled funnel end.

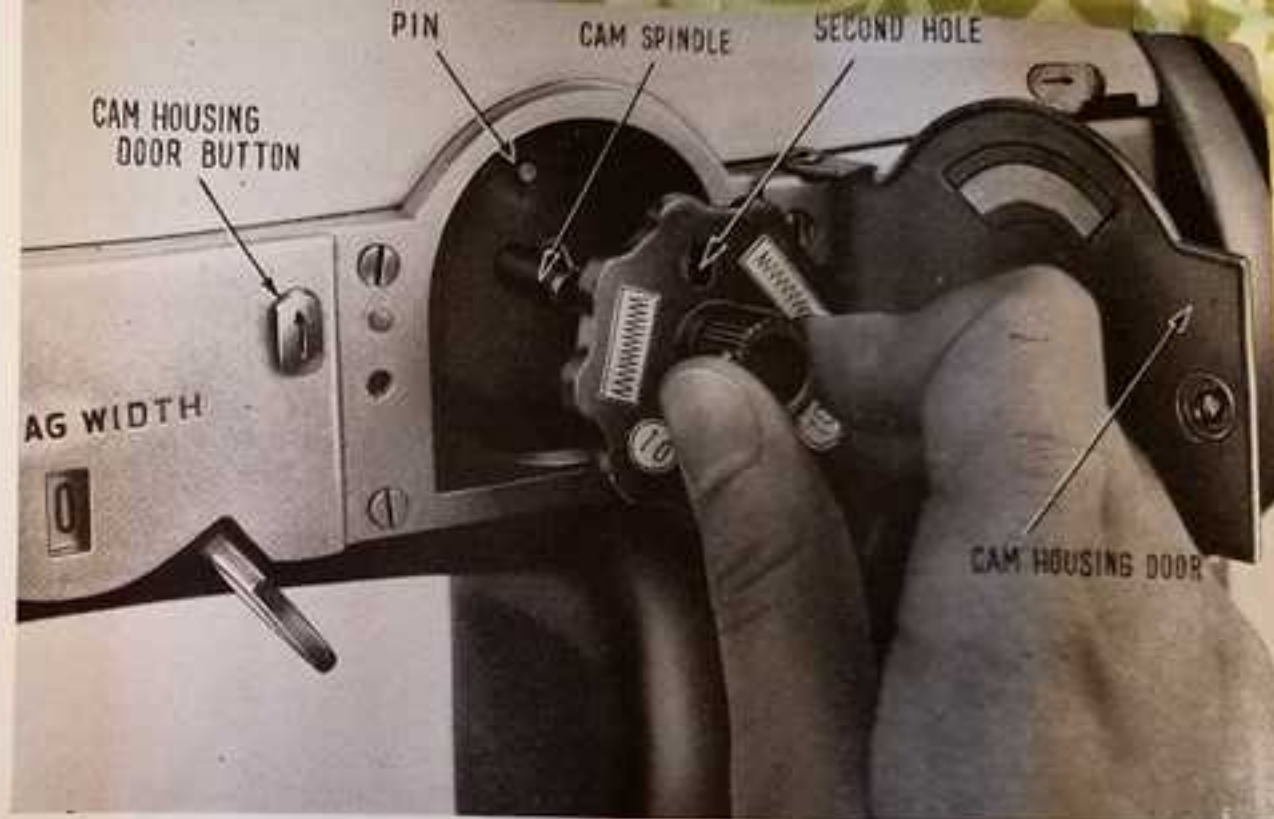


Fig. 5



		CAM No.											
ZIG ZAG WIDTH		01	02	03	04	05	06	07	08	09	10	11	12
	0												
	1												
	2												
	3												
	4												
	5												

Fig.—6

Note from Figure 7, that with the Zig-Zag width set at 1, the variations in the relative positions of the narrowest Zig-Zag stitch, such as left, center and right. The wider the Zig-Zag width is set, the less difference there will be in the relative positions, until the #5 width is used, at which time there is no position difference at all.

MOVING THE ZIG-ZAG WIDTH LEVER

By moving this lever, the width of the zig-zag stitch can be regulated. The larger the number appearing in the window, the wider will be the stitch. The highest number is '5'. As mentioned before, '0' is used for straight sewing and for inserting and removing cams.

Numbers '4' and '5' are in red. This is to remind you that you will break your needle when sewing with the double needle at these widths.

By changing the width of stitches, you may create many different variations of designs even with the same cam. Fig. 6 will show you how different positions of the zig-zag width lever affect the design which one cam can sew. Study it carefully, so you may apply it to the best of your creative and artistic ability.

NEEDLE POSITION DIAL

Turn the needle position dial knob to set the machine at any of the three needle positions; right, center, or left.

"IMPORTANT"

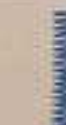
		ZIG-ZAG WIDTH					
ZIG-ZAG POSITION		0	1	2	3	4	5
							
							
							

Fig.—7

The symbols  and  in the needle position dial window, which indicate right and left needle positions, respectively are painted red. Like the red number '4' and '5' of the zig-zag width window, they are to warn you against sewing with either of them when using the double needle. For if you do, you are sure to break the double needle. Before beginning to sew with the double needle, check and avoid red marks in the needle position dial window as well as red numbers in the zig-zag width window.

Thoroughly familiarize yourself with the various effects the change in needle position has on the designs at different stitch widths. The needle position dial used in combination with the zig-zag stitch width lever and the stitch length regulating dial will provide you with the opportunity to produce countless varieties of decorative stitches.

Zig-Zag sewing is fun and, since it is all automatically done by the machine, is simple to do. Take a sample piece of material, and step by step follow the instructions on pages 9 and 10,

until you become familiar with the purposes of the various controls. Always make all settings of the Zig-Zag controls and sew a sample piece of material before proceeding to sew on dress or other work. If you intend to use Zig-Zag stitching in conjunction with attachments, be sure to read part 3 first.

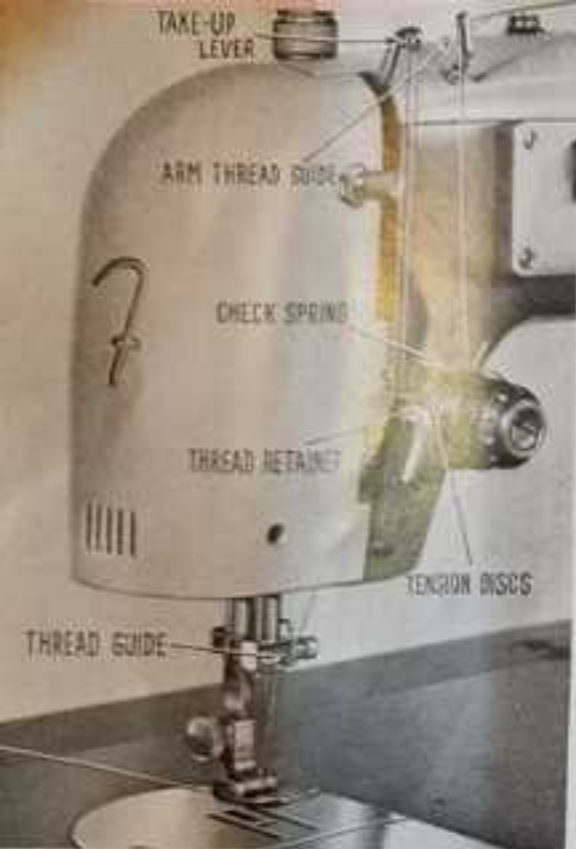


Fig.—10

Part 2 Preparing To Sew

INSERTING THE NEEDLE

1. Raise needle bar to highest position by turning the balance wheel towards you.
2. Loosen the needle clamp screw with a screw driver, and with the flat surface of the needle shank facing away from you, push the needle up along the groove of the needle bar as far as it will go.
3. Tighten the needle clamp screw firmly with the screwdriver. When tightening the clamp, hold the needle steady.



Fig.—8



Fig.—9

HOW TO THREAD THE MACHINE

Prepare to thread by bringing up the reclining spool pin to sewing position, then turn balance wheel towards you till both the needle bar and the take up lever are at their highest position. Follow the procedure given below (Fig. 10):

1. Place a spool of thread on the spool pin.
2. Lead the thread through the arm thread guide from right to left and down.
3. Run it between the tension discs from right to left and up.
4. Thread it through the check spring and down, and up again through the thread retainer located to the left of the upper thread tension regulator.

5. Pass it through the eye of the take-up lever from right to left, then down through the same thread retainer mentioned before and all the way down to the needle, passing through the thread guide (black ring under the face plate) and also through the thread guide situated at the lower end of the needle bar and in front of the needle clamp. Finally thread the needle from front to back, pulling the thread through about 3 or 4 inches. You are now ready to sew.

WINDING THE BOBBIN

1. Disconnect the balance wheel from the stitching mechanism by holding the balance wheel with your left hand and turning the stopmotion knob COUNTERCLOCKWISE with your right hand. (Fig. 11)
2. Raise the reclining spool pin and place a spool of thread on it.
3. Pass the thread through the arm thread guide, then between the components of the bobbin winder. Wind the end of the thread seven or eight times on the bobbin to be used. Put this bobbin onto the bobbin winder spindle. When doing so, bear in mind that the bobbin will spin up and towards the back of the machine.
4. While slowly turning the balance wheel toward you with your right hand, operate the rheostat control as you would in actual sewing.
5. When enough thread is wound on the bobbin, the stop latch will snap away from the winding bobbin bringing it to a stop.



Fig.—11



Fig.—12

THIS IS HOW YOU THREAD THE BOBBIN CASE

Before threading the bobbin case, study Fig. 13, 14 and 15 to get a general idea as to how it is done.

- (1) Hold the bobbin case with your left hand and put the bobbin into the bobbin case with your right, leaving about two inches of the thread end unwound (Fig. 13). As the bobbin is being inserted in the bobbin case, the thread flow should cause the bobbin to rotate counter-clockwise (Fig. 5).

- (2) While holding the bobbin case as before, grasp the thread end with your right hand, guide it into the cross slot (Fig. 14).

- (3) Then pull it through under the tension spring of the bobbin case (Fig. 14) until it enters the delivery eye (Fig. 15).

When you are using a bobbin case with a hole in the position finger, thread the thread through it also.

But, if you wish to obtain the specially precise straight sewing, do not thread through the hole.



Fig. 13



Fig. 14



Fig. 15

THIS IS HOW YOU PLACE AND REMOVE THE BOBBIN CASE

To Place :

1. Raise the presser bar.
2. Raise the needle bar to its highest point, by turning the balance wheel slowly towards you.
3. Open the hinged plate.
4. After threading the bobbin case, hold it by the latch with thumb and forefinger of left hand. With its position finger opposite the notch (Fig. 17) at the top of the shuttle race, mount it onto the center stud of the shuttle (Fig. 16). When the latch is propped and secured, as shown in Fig. 16, the bobbin will not fall out of the bobbin case.
5. Release the latch and press the bobbin case in until the latch catches the groove near the end of the stud.
6. Allow the end of the thread to hang free a few inches long.
7. Close the hinged plate.

To Remove :

Do 1, 2 and 3. as above.

4. Hold the bobbin case latch with thumb and forefinger of left hand and take out the bobbin case from the shuttle.

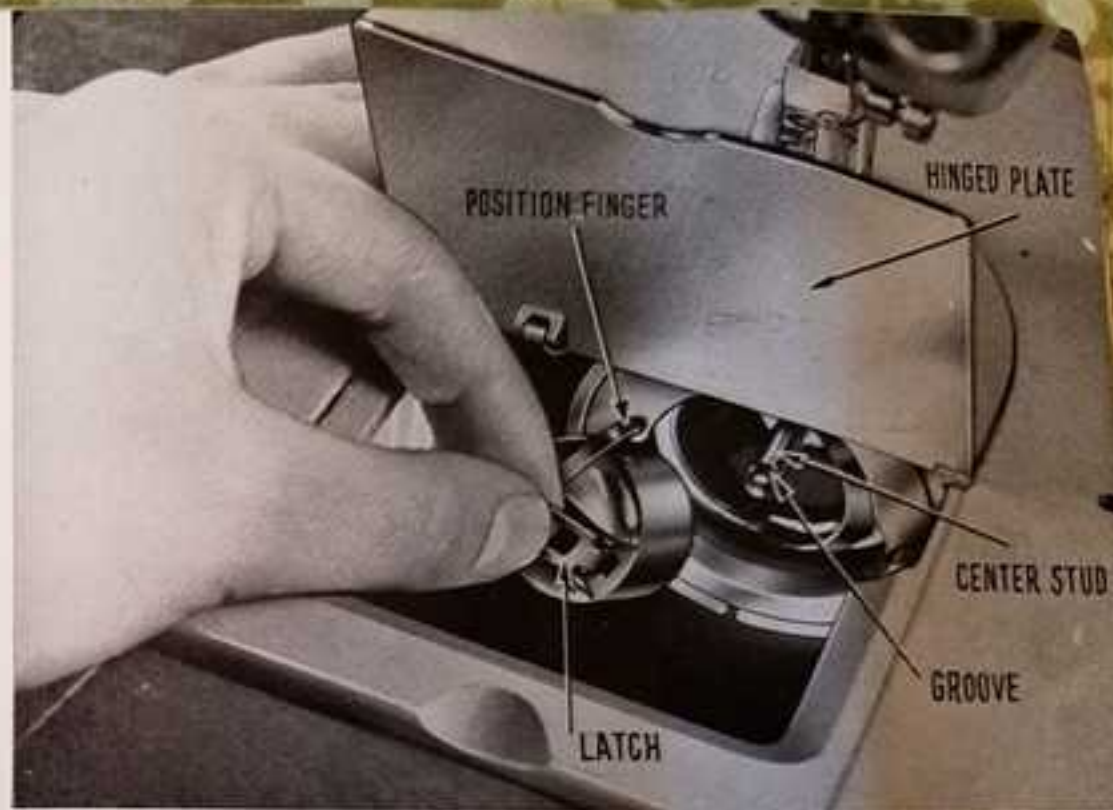


Fig.—16

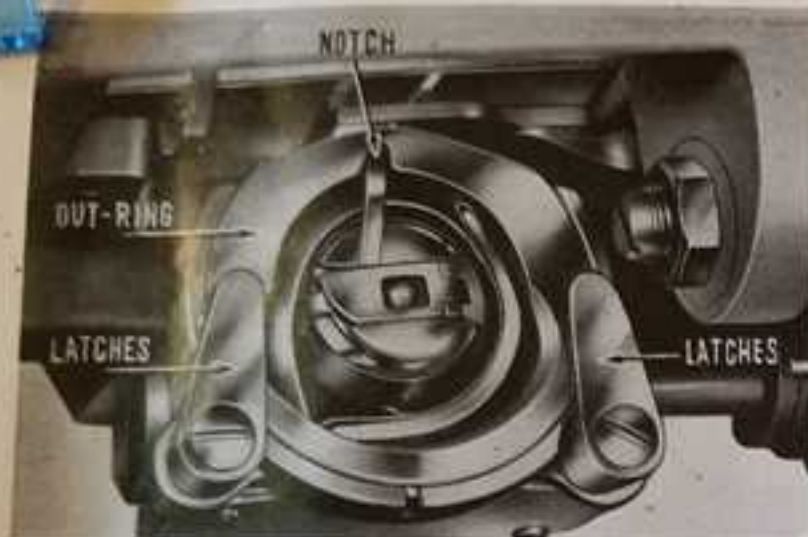


Fig.— 17



Fig.— 18

SNAP-OPEN RACE IS EASY TO CLEAN

When thread gets tangled in the race or dust gets in between the shuttle and shuttle-race, it will cause heavy running or complete stoppage of the machine.

When this occurs :-

- (1) Raise the needle bar to its highest point and take out the bobbin case.
- (2) Release the latches on both sides of shuttle-race by turning them side ways then take out the out-ring and the shuttle body.
- (3) After shuttle-race and shuttle have been cleaned put all of them back in reverse order.
- (4) Turn latches to original position.

GETTING READY TO SEW

- (1) Hold the end of the upper-thread with the left hand, leaving it slack from the hand to the needle.
- (2) Turn the Balance wheel over toward you for the needle to move down and up again to its highest position.
- (3) Pull the thread you are holding, and the lower-thread will be brought up with it through the hole in the needle-plate, as shown Fig. 19.
- (4) Place both ends of the upper and lower thread under and to the back of the presser foot (Fig. 20).



Fig.—19.

COMMENCING TO SEW

- (1) Place the fabric to be sewn beneath the presser foot.
- (2) Lower the presser foot, by lowering the presser bar lifter.
- (3) Commence sewing slowly by turning the balance wheel in direction toward you while gradually working the rheostat control.

Always turn balance wheel toward you and not away from you.

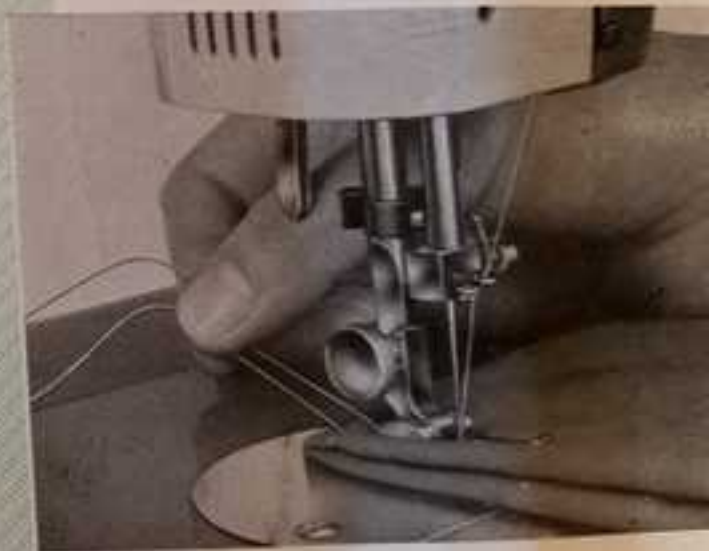


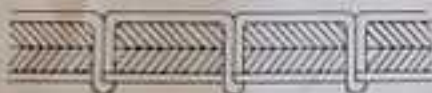
Fig.—20



Correct stitch



Upper thread tension too strong



Upper thread tension too weak

Fig.—21



Fig.—22

TO REMOVE THE WORK

- 1) Raise the needle bar to its highest position, by turning the Balance Wheel over toward you.
- 2) Lift the presser foot by lifting the presser bar lifter.
- 3) Move the fabric back to the left and cut off the thread.
- 4) Leave ends of threads a few inches long, under and to the back of the presser foot.

REGULATING THE THREAD TENSIONS

Ordinarily the tension of the upper and lower threads should be equal so as to lock both threads in the center of the material (Fig. 21). If one tension is stronger than the other, imperfect stitching will result. Fine materials require a light tension, while heavy materials require more tension to obtain a perfect stitch.

To increase the tension, turn the tension regulator dial knob (Fig. 22) clockwise. To decrease the tension, turn it to the OPPOSITE DIRECTION.

When regulating the upper thread tension always have the presser foot down.

As all machines are correctly adjusted before leaving the factory and readjusted before the dealer delivers them to you, the lower thread tension seldom requires altering, but if this becomes necessary, tighten the tension regulating screw in the tension spring on the outside of the bobbin case for more tension, or loosen the screw slightly for lesser tension (Fig. 23).

Tension regulating screw



Fig.—23



Fig.—24

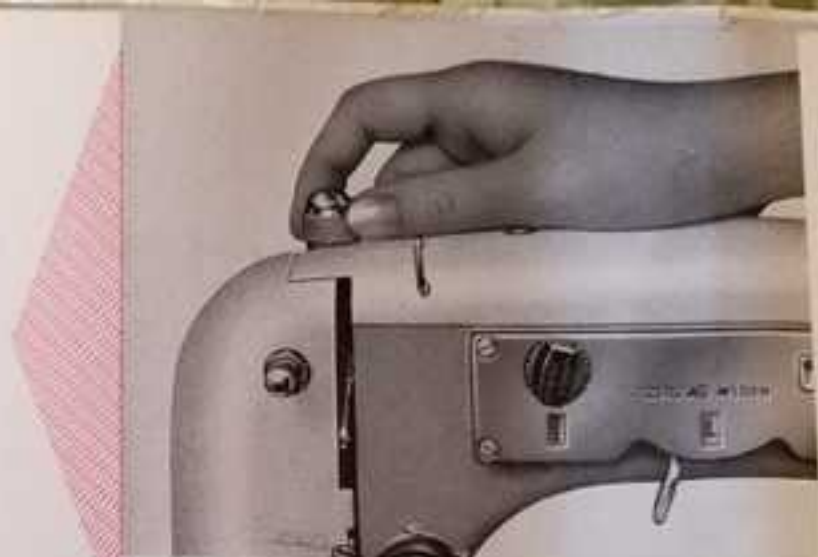


Fig.—25

TO REGULATE THE PRESSURE OF THE PRESSER FOOT

Light material will not sew well with too much pressure, nor will heavy fabrics under too little. To adjust for correct pressure, use the darner. (Fig. 24, 25). When used right in coordination with the upper thread tension regulator and the drop feed dial, this darner becomes an effective tool for obtaining good sewing results.

By pushing down the Darner with the thumb, the pressure of the presser foot can be increased. (Fig. 24). To lower the pressure, turn the Darner release clockwise (marked) with the thumb and forefinger and the pressure will be brought to minimum. (Fig. 25).

Then push down the Darner for the pressure sought.



Fig.—27



Fig.—28

DROP FEED DIAL

By using the drop feed dial (Fig. 27) you may adjust the feed dog for sewing different types of materials and for darning.

- 1 For sewing very light fabrics, move indicator to 'LO'; and for heavy materials 'HI'.
- 2 When the indicator is at the 'DN' position, the feed dog will be lowered below the surface of the Needle plate.

This is for darning and embroidering enables you to move the work freely in any direction you choose.

REGULATING THE STITCH LENGTH AND PUSH-BUTTON REVERSE SEWING

Use the stitch length regulating dial knob to get the desired stitch length. Rotating the knob in direction indicated by "S" will produce smaller stitches and toward "L" longer stitches. The actual size of stitch is shown in the window to the right of the knob. The largest number and largest stitch occurs when the numeral 4 appears in the dial.

This regulator controls both forward and reverse sewing stitch lengths at the same time. For reverse sewing use the reverse sewing push-button. With thumb depress the reverse button "R" all the way in, and while holding it in this position, sew as usual. The machine will continue to sew as long as the button is depressed, and will automatically snap back to forward sewing position when pressure is released.

BUILT-IN LIGHT

The lamp is built-in under the face-plate. It directs a beam of soft illumination at the point of sewing, with no eye-straining glare.

The switch for the lamp is located on the face plate.

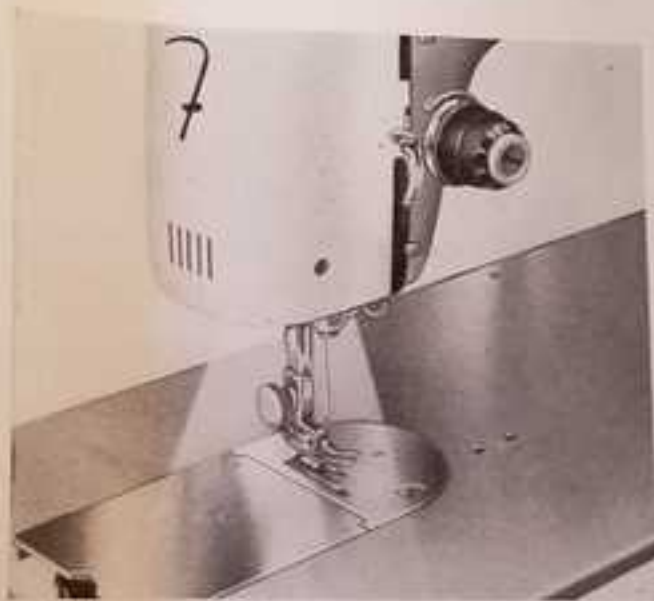


Fig.—29

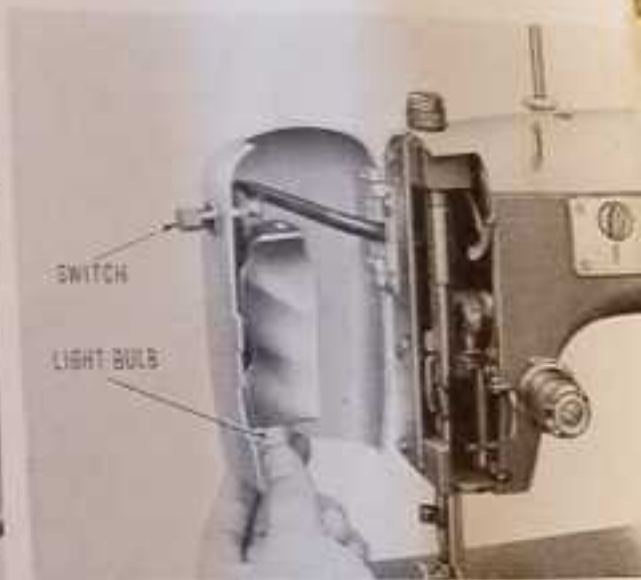


Fig.—30

SOME USEFUL SEWING HINTS

TO TURN CORNERS:

1. Stop the machine, with needle still in the material.
2. Raise the presser foot and turn the fabric using the needle as a pivot.
3. Lower the presser foot and resume sewing.

(NOTE: This is for single needle sewing only.)

TO SEW ELASTIC FABRICS:

In sewing such elastic materials as flannels, bias cut cloths, etc., it is necessary to sew them with moderately low thread tension. If not, the thread will break when the sewn materials are stretched.

TO SEW VERY THIN CLOTH:

When sewing very thin cloth which tends to crumple as you sew, place a sheet of tissue paper or any other thin paper underneath the material and sew with shortest stitch possible. This will keep your work from crumpling.

BASTING:

1. Use a thicker lower thread than the upper.
2. Lower the tension of the upper thread (and/or raise the lower thread tension) and employ the longest stitch possible.
3. The stitches may then be easily undone by pulling the lower thread.

KEEPING YOUR MACHINE IN PERFECT CONDITION:

1. Keep all moving parts of the machine constantly oiled and clean.
2. Always turn balance wheel towards you, even when by hand.
3. Do not run machine without cloth.
4. When sewing, do not pull the material lest you bend the needle. The machine is designed to feed itself.
5. Keep hinged plate closed when operating the machine.
6. Do not operate machine when presser bar lifter is raised.

CAUSES OF COMMON DIFFICULTIES

BREAKING OF THE UPPER THREAD :

1. Incorrect threading.
2. Upper thread tension too tight.
3. Faulty needle, or needle set in incorrectly.
4. Needle brushing against presser foot or other attachments.
5. Needle eye too small for thread used.
6. Starting the machine suddenly or with a jerk.
7. Starting the machine with the take up lever at its lowest point.

BREAKING OF THE LOWER THREAD :

1. Incorrect threading of the bobbin case.
2. Lower thread tension too tight.
3. Bobbin being wound too fully.
4. Rough edge of hole in throat plate caused by improper needle action.

BREAKING OF THE NEEDLE :

1. Pulling the fabric while machine is running, thus causing the needle to strike the throat plate.
2. Using bent needle.

SKIPPING STITCHES :

1. Using bent or blunt needles.
2. Needle inserted incorrectly.
3. Needle threaded improperly.
4. Using wrong sized needle.
5. Pressure of presser foot insufficient, especially when sewing heavy material.

UNEVEN STITCHES :

1. Presser foot resting unevenly on material.
2. Feed dog not being high enough.
3. Too short stitches used.
4. Pulling the cloth while the machine is running.
5. Using too fine a needle with too coarse a thread.

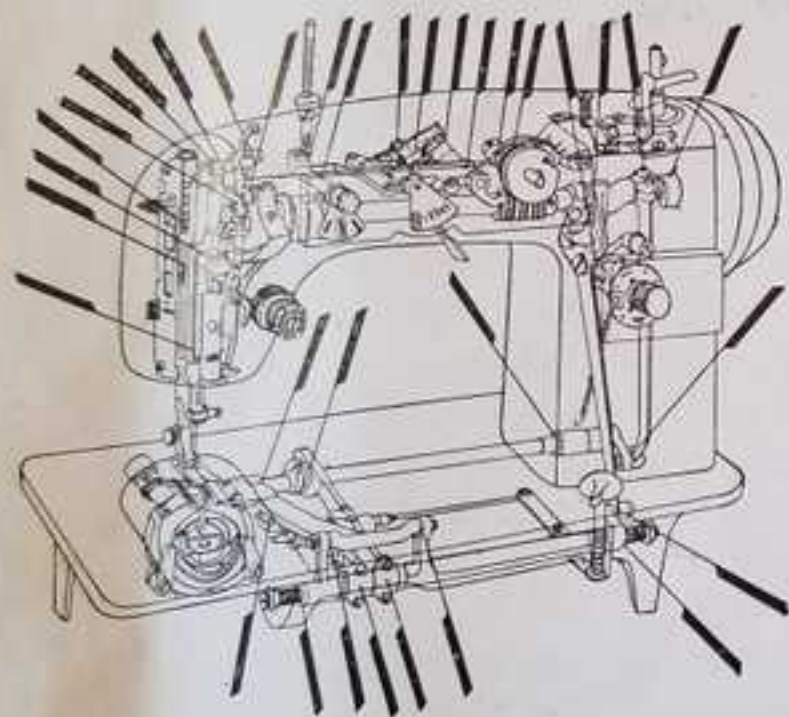


Fig.—31

IMPORTANT. Oil the electric motor one drop at each oil hole about once every six months, not oftener, unless used every day, in which case oil about once every month or so.

TO OIL YOUR SEWING MACHINE

To see that your machine is always in smooth running condition you must keep it oiled at all times. No grease is required. Just a drop of oil is sufficient at each time of oiling. Points to be oiled are illustrated in Fig. 31. To oil your machine thoroughly, it will be necessary for you to open face plate, take off arm cover plate, or turn the machine over to get to parts underneath the bed. After oiling, run the machine at a high speed for a few minutes to get the oil to penetrate to all parts.

NEEDLE AND THREAD SIZES (USE 15 x 1 NEEDLE ONLY)

Sizes & Grades of Needles	Type of Fabric and Work to be Done	SIZE OF THREAD		
		Cotton	Silk	Linen
11,0 or B (Medium-Fine)	Medium light-weight and summertime fabrics. For house dresses, children's dresses, washable cotton dresses, aprons, curtains.	80 to 100	0 Twist	
1/2 or 14 (Medium)	Dress silks and cottons, light weight woolens, draperies, fabric furnishings. For general household sewing, fine men's shirts, smocks, window draperies and fabric decorations.	60 to 80	A & B Twist	
1 or 16 (Light-Heavy)	Heavy cretonne, madras, muslin, brocades and quilts. For men's work shirts, sturdy smocks and aprons, heavy quilting and fabric furnishings.	40 to 60	C Twist	
2 or 18 (Medium-Heavy)	Heavy woven coating, light weight canvas, bed ticking, upholstery and awning materials, slipcover fabrics. For work or sports uniforms, suits made of strong linen or cotton fabrics, awnings, slip covers and mattresses.	30 to 40	D Twist	
3 or 19 (Heavy)	Heavy woven suiting, coating, duck, ticking, drilling, canvas and sackings. For heavy wash uniforms, bedding supplies for hospitals, hotels and camps.	10 to 30	E Twist	60 to 80
4 or 21 (Extra-Heavy)	For bags, canvas, coarse cloths and heavy goods.	Very Coarse		40 to 60

Part 3 Sewing With Attachments

STRAIGHT SEWING PRESSER FOOT AND NEEDLE PLATE

This presser foot and needle plate is used for straight sewing only.

It is suggested that you use them if you plan to sew straight stitches continuously for a considerable length of time. (The presser foot and needle plate fixed on the machine at time of purchase are for zig-zag sewing.)

However, if you are sewing straight stitches alternately with zig-zag ones, it would not be advisable to take the trouble to alternate between the two kinds of presser foot and needle plate as frequently as you are changing over from zig-zag to plain stitch sewing, or vice versa.

DOUBLE NEEDLE

Sewing with the double needle is always an exciting experience. By using threads of the same color or different colors, you will be able to create many beautiful and attractive patterns with any of the cams you have (Fig. 32).

To insert the double needle do as you would in single needle. Take particular care to face the flat side of the shank (Fig. 33) to the rear or away from you when pushing the needle up the groove of the needle bar.

The two prongs of the double needle are of different lengths. When the double needle is put in properly, the two prongs will appear side by side, and the shorter to the left of the longer (Fig. 34). Check and see if your needle is in correctly. Threading for double needle sewing is also done according to the single needle operation. In other words thread the first thread as you would for single needle sewing. Then, take a second spool of thread and place it on the unoccupied spool pin. Pass this thread along the same route as the first. However, it must pass through different holes of the arm thread guide, between different parallel tension discs, through the other parallel valley of the check spring, through the other loop of the last thread guide, and finally, through the other eye of the double needle. Be careful not to cross the threads at any point.

CAUTION! Before starting to sew with the double needle, always, please look at the zig-zag width window and the needle position dial window to see whether or not any red number and/or symbol are or is showing. If so, do not sew, for you are bound to break the double needle. '4' and '5' are the red numbers and  and , the red symbols. One red number or symbol appearing in one or the two windows is enough to break the double needle. So, be very careful, and check twice.

ZIG-ZAG SEWING PRESSER FOOT

This zig-zag sewing presser foot has a groove (Fig. 35) cut into its bottom, which enables it to glide over highly raised stitches or design closely sewn. Use this presser foot in place of the standard zig-zag presser foot found on the machine at time of delivery, when sewing stitches which tend to be bulky.

Flat side
of
the shank



Fig.—33

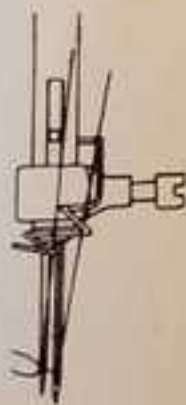


Fig.—34

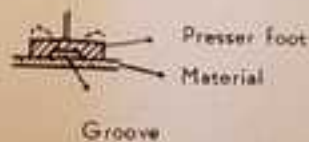


Fig.—35



Fig.—32



Fig.—36



Fig.-37

BUTTON SEWING PRESSER FOOT

The button sewing presser foot is used for sewing on buttons (Fig. 37), hooks and snaps, etc. A two-holed button is sewn on in the following manner:

1. Attach the button sewing presser foot on the presser bar.
 2. Drop the feed dog by moving knob to DN position.
 3. Move the zig-zag width lever to '0'.
 4. Insert cam No. 01.
 5. Turn the needle position dial knob to bring needle to the left or  position.
 6. While holding the button to the material at the spot it is to be sewn on place button under presser foot. Align the left hole of the button with needle point, at the same time place the button, so that the other hole of it will be directly to the right of the first. Turn the balance wheel slowly with your hand to see if the needle will freely pierce the left needle hole. Correct if necessary.
 7. Lower presser foot.
 8. Move zig-zag lever to the right slowly, so that the needle comes exactly above hole on the right. Again, turn balance wheel carefully to check if the needle will freely sew through this hole. Correct if needed.
 9. Sew as many stitches as may be necessary to fasten the button on the material.
 10. Move zig-zag width lever to '0' and finish off with four or five stitches.
- Apply the above method to sew on buttons with four holes, hooks, and snaps, etc.

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14.
18

BUTTONHOLE SEWING PRESSER FOOT

1. Replace regular presser foot with Buttonhole presser foot.
2. Insert Cam 01
3. If heavy buttonhole is desired, thread cord through hole in presser foot.
4. Turn needle position dial to left so that  appears in needle position window.
5. Set Zig-zag width at 2, and the stitch regulator at a short stitch, length window).
6. Mark desired length of buttonhole on the material, and sew the first bank, stopping the machine so that the needle is in the material at right side of stitching (A).
7. Lift presser foot, and using needle as pivot, turn material end for end as indicated by arrow. Before lowering presser foot, make sure that the row of stitching is lined up perfectly straight, and not slanted to right or left. Lower presser foot, and turn hand wheel, by hand just enough to raise the needle out of the material.
8. Set Zig-zag indicator at 4, and while holding the material firmly to prevent it's movement, sew about five or six stitches, which will make the first bar. Stop the machine with the needle out of the material, but with the presser foot remaining down.
9. Reset zig-zag width to 2, and sew the second bank of the buttonhole, until you have sewn equal to the length of the first bank.
10. Stop the machine, with needle out of material, but with presser foot still down, and reset zig-zag width to 4.
11. Again holding the material to prevent it from moving, complete five or six stitches which will form the second bar, and stop the machine with the needle out of the material but without lifting the presser foot or disturbing the material.
12. Now set the Zigzag width to 0 and make two or three stitches, meantime holding the material firmly to prevent it from moving. This will permanently fasten the bar stitching and prevent ravelling of the stitching.
13. Cut open the buttonhole with the ripper, being careful not to cut into either of the bars.
14. When sewing buttonholes on very sheer materials, it is recommended that you place a piece of tissue paper underneath the material. The paper can later be torn away; This will prevent sheer materials from tearing and puckering.

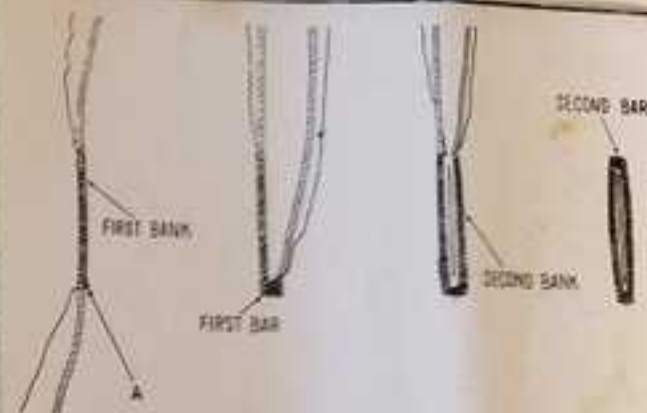


Fig.—38



Fig.—39



Fig.—40

HEMMING PRESSER FOOT

There are two hemming presser feet, small and large. Choose either one to suit your work. Clip the corner of the material to be hemmed (Fig. 39), so that it will be easier for you to insert it in the hemming presser foot. Feed the clipped edge of the material by curling it into the spiral tongue or the scroll of the foot. At first, it might be necessary for you to push the fabric in and out of the scroll to get it in correctly. Bring the starting edge of the material directly under the needle, lower the presser foot, and then begin sewing. Keep guiding the material, so that the scroll is filled all the time (Fig. 40).

FOLDING PRESSER FOOT

This presser foot is used to join two pieces of material securely together. It is done in two seams.

First Seam: Lay one piece of material on top of the other, so that the edge of the lower sticks out about $1/16$ of an inch from under the one on top. The right sides of the plies should be facing each other, or inwardly. Bring material near presser foot, fold over protruding lower edge and insert the overlap into the presser foot; and then, sew. (Fig. 41)

Second Seam: Open up both plies of cloth and stitch down the ridge to form second seam, by feeding it in the folder presser foot. (Fig. 42)

For heavier material, use straight stitches; and for tricot and other elastic fabrics, zig-zag stitches.



Fig.—41



Fig.—42



Fig.—39



Fig.—40

HEMMING PRESSER FOOT

There are two hemming presser feet, small and large. Choose either one to suit your work. Clip the corner of the material to be hemmed (Fig. 39), so that it will be easier for you to insert it in the hemming presser foot. Feed the clipped edge of the material by curling it into the spiral tongue or the scroll of the foot. At first, it might be necessary for you to push the fabric in and out of the scroll to get it in correctly. Bring the starting edge of the material directly under the needle, lower the presser foot, and then begin sewing. Keep guiding the material, so that the scroll is filled all the time (Fig. 40).



Fig.—43

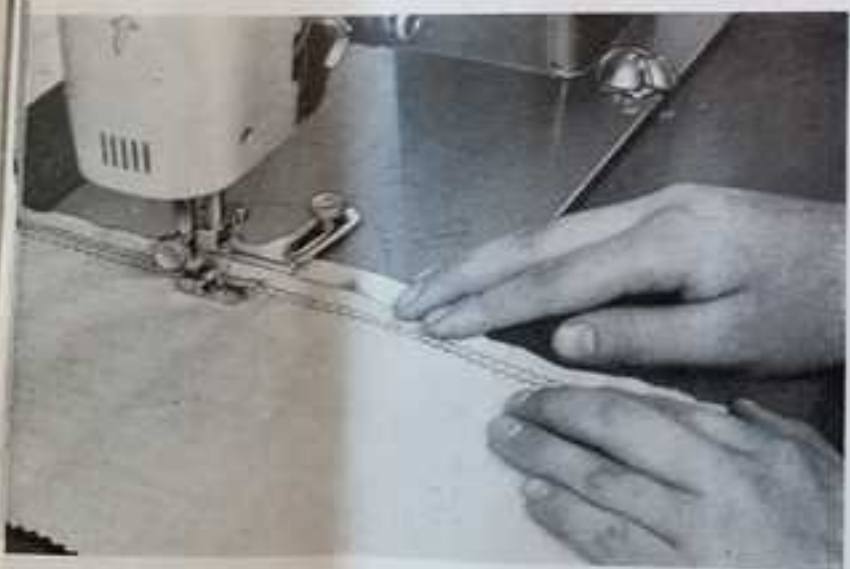


Fig.—44

CORDING PRESSER FOOT

This presser foot is used in cording, which is done in the following steps :

1. Attach presser foot to presser bar and thread cord through hole of presser foot.
2. Insert cam No. 1.
3. Turn the needle position dial knob to center position or $\approx$.
4. Set zig-zag stitch lever for width enough to cover cord.
5. Stitch length should be regulated to give satin stitch effect.

STRAIGHT GUIDE

Attach straight guide by screwing its screw in hole in the bar situated to the right hand side of the hinged plate.

Very straight edge stitching and paralleled sewing can easily be done with the aid of the straight guide. It can be used effectively for both plain and zig-zag stitching.

QUILTER

The quilter is used to sew evenly spaced rows of stitches as in quilting.

Attach quilter to presser bar. Move adjustable bar to the left or right to desired width. Sew each row of seam by moving the material, so that the curved part of the quilter bar comes directly above the row of just finished stitches.

The quilter can be applied for straight as well as zig-zag sewing.

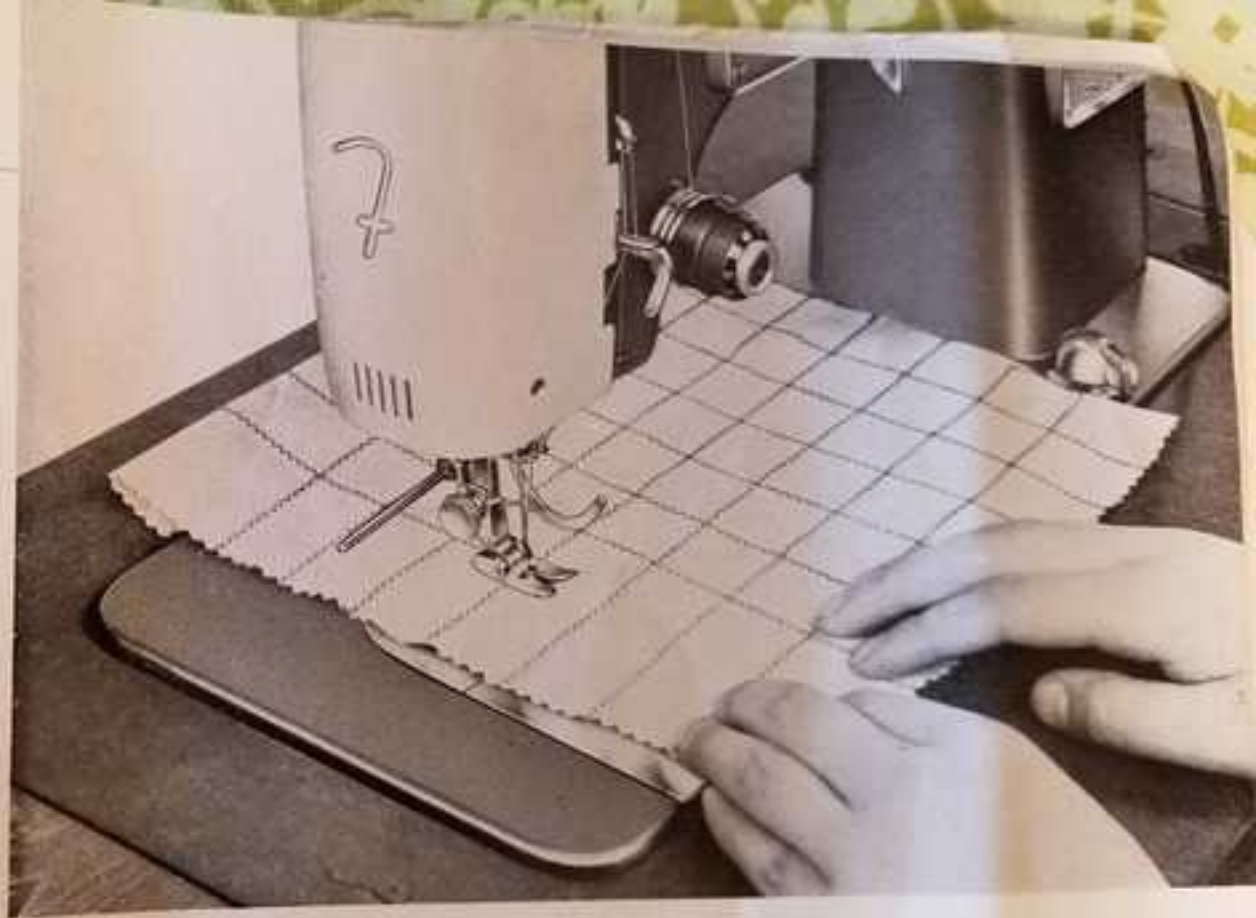


Fig.—45



Fig.—46

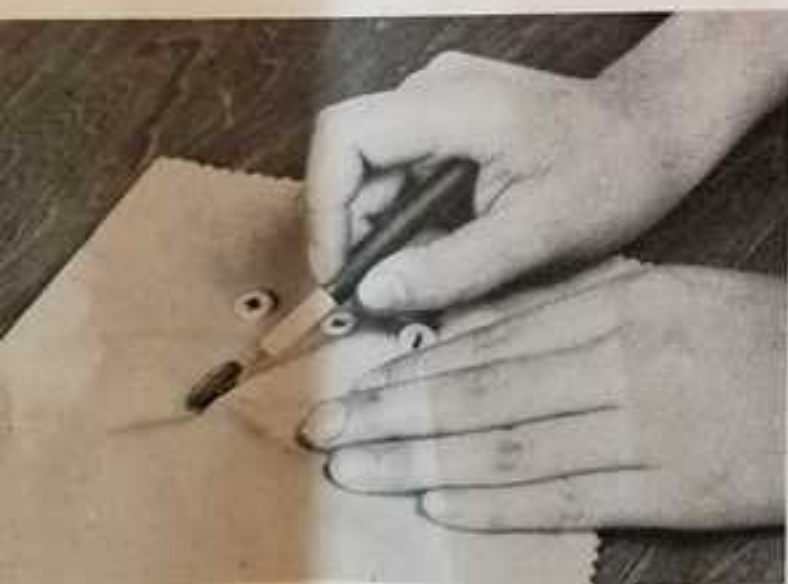


Fig.—47

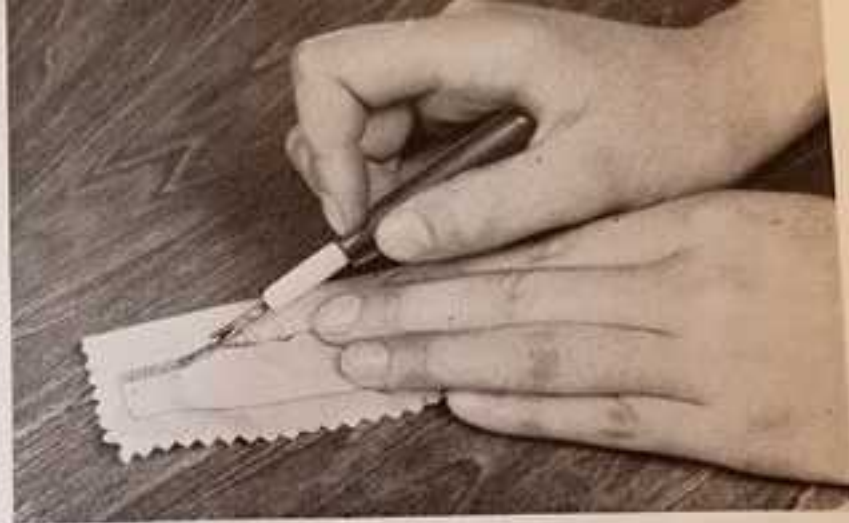


Fig.—48

STITCH RIPPER

The ripper is used to cut buttonholes (Fig. 46), picking off buttons (Fig. 47), and for ripping (Fig. 48) all sorts of stitches, etc.



Fig.—49

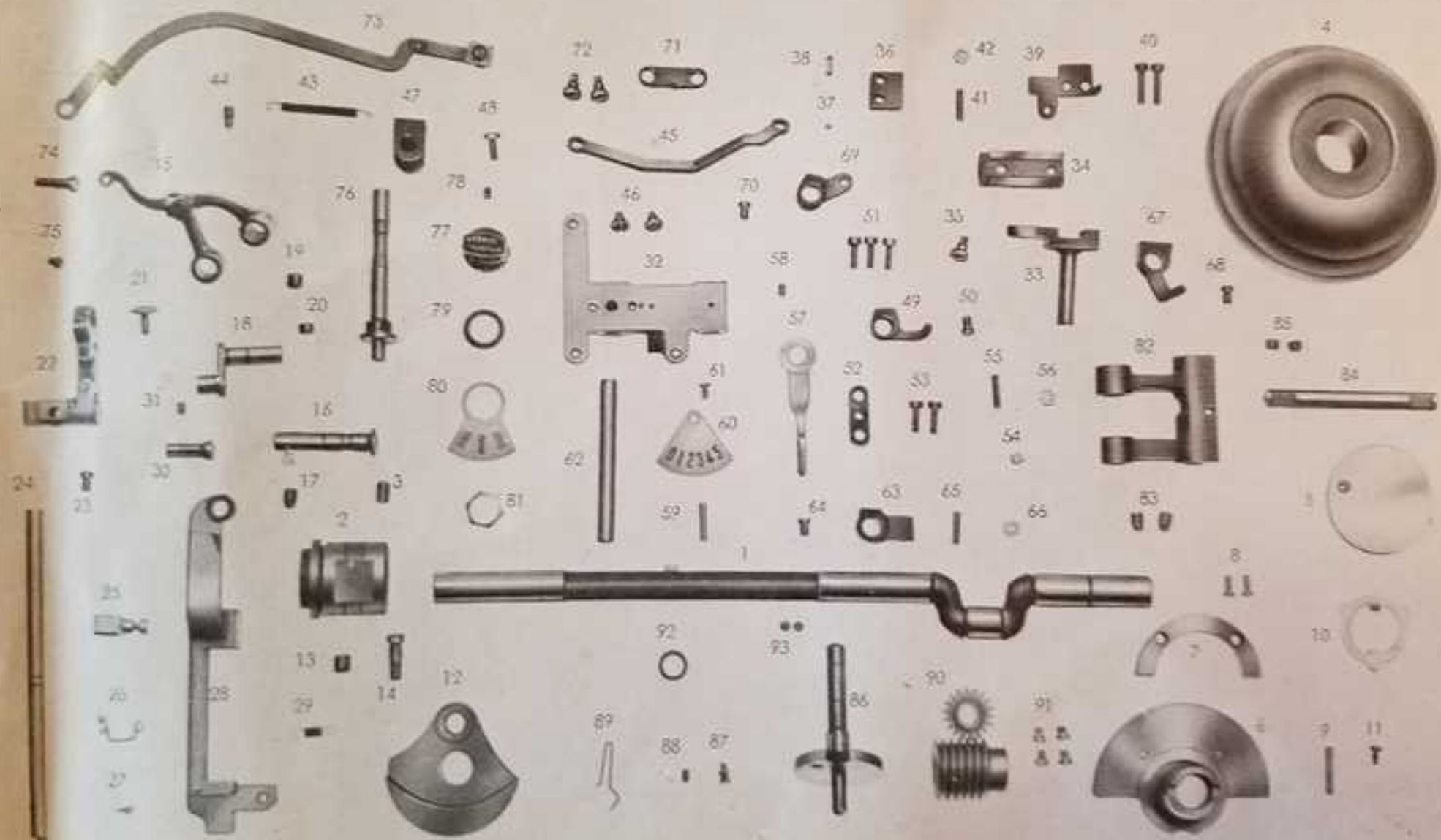


Fig.—50

EMBROIDERING SPRING

The embroidering spring is used for embroidering and darning. To use embroidering spring remove presser foot and attach it to needle bar as shown in fig. 49. Hook the spring on the needle clamp after passing the needle through the inside and through the small hole at the end of it. The thread, after passing through the thread guide located at the end of the needle bar, should pass the inside of the spring before being threaded through the needle eye. Lower the presser bar before commencing to sew. The spring holds the material down when the needle rises. It enables you to see clearly the work being done and also, keeps the needle from breaking. Drop the feed dog for embroidering and darning.

ZIG-ZAG SEWING MACHINE PARTS



ZIG-ZAG SEWING MACHINE PARTS



ZIG-ZAG SEWING MACHINE PARTS



Parts No.	Parts Name
1	Arm shaft
2	Arm shaft bushing
3	Arm shaft bushing set screw
4	Balance wheel
5	Stop motion clamp screw
6	Balance wheel bushing
7	Balance weight
8	Balance weight set screw
9	Bushing pin
10	Stop motion clamp washer
11	Stop motion small screw
12	Needle bar crank
13	Needle bar crank set screw
14	Needle bar crank position screw
15	Thread take up lever (Complete)
16	Thread take up lever hinge pin
17	Thread take up lever hinge pin set screw
18	Thread take up crank
19	Thread take up crank set screw
20	Thread take up crank position screw
21	Thread take up lever cap screw
22	Needle bar connecting link (Complete)
23	Needle bar connecting stud set screw

Parts No.	Parts Name
24	Needle bar
25	Needle clamp (Complete)
26	Needle bar thread guide
27	Needle bar thread guide set screw
28	Needle bar support
29	Needle bar support pull spring
30	Needle bar support upper pin
31	Needle bar support upper pin set screw
32	Zig Zag installation set stand
33	Zig Zag regulator set shaft
34	Zig Zag regulator set box
35	Zig Zag regulator set screw
36	Needle position change limit ball receptacle
37	Limit ball
38	Limit ball push spring
39	Zig Zag stop lever receptacle
40	Needle position change limit ball receptacle set screw
41	Zig Zag limit screw
42	Zig Zag limit screw nut
43	Zig Zag regulator pull spring
44	Zig Zag regulator spring hang pin
45	Needle position change lever
46	Needle position change lever combine screw

Parts No.	Parts Name
47	Needle position change lever crank
48	Needle position change lever crank set screw
49	Cam contact lever
50	Cam contact lever set screw
51	Zig Zag installation set stand set screw
52	Zig Zag lever shaft tighten pin receptacle
53	Zig Zag lever shaft tighten pin receptacle set screw
54	Zig Zag lever shaft tighten pin
55	Zig Zag lever shaft tighten screw
56	Zig Zag lever shaft tighten screw nut
57	Zig Zag width adjusting lever
58	Zig Zag width adjusting lever set screw
59	Zig Zag width adjusting shaft knock pin
60	Zig Zag width indicator
61	Zig Zag width indicator set screw
62	Zig Zag width adjusting shaft
63	Zig Zag width limit lever
64	Zig Zag width limit lever set screw
65	Zig Zag width limit lever screw
66	Zig Zag width limit lever screw nut

Parts No.	Parts Name
67	Zig Zag stop lever
68	Zig Zag stop lever set screw
69	Zig Zag width limitor lever
70	Zig Zag width limitor lever set screw
71	Zig Zag width limitor connecting rod
72	Zig Zag width limitor connecting rod set screw
73	Needle bar support connecting rod
74	Needle bar support lower pin
75	Needle bar support lower pin set screw
76	Needle position change shaft
77	Needle position change dial
78	Needle position change dial set screw
79	Needle position indicator washer
80	Needle position indicator
81	Needle position indicator nut
82	Cam set spindle receptacle
83	Cam set spindle receptacle set screw
84	Cam set spindle receptacle pin
85	Cam set spindle receptacle pin set screw
86	Cam set spindle
87	Cam settle pin

Parts No.	Parts Name
88	Cam settle pin set screw
89	Cam settle spring
90	Cam rotating gear (complete)
91	Cam rotating gear set screw
92	Cam rotating thrust ring
93	Cam set spindle thrust ring set screw
94	Presser bar
95	Presser bar bushing
96	Thread cutter
97	Darner (complete)
98	Presser adjusting plate nail spring
99	Darner set screw
100	Floating presser foot
101	Presser foot set screw
102	Presser spring
103	Presser bar stud (upper)
104	Presser bar upper stud set screw
105	Presser bar stud (lower)
106	Presser bar lifter
107	Presser bar lifter pin
108	Thread tension release lever
109	Thread tension release lever spring
110	Thread tension release lever
111	Crank rod (complete)

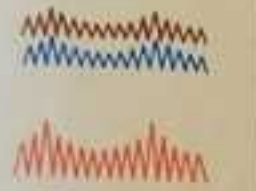
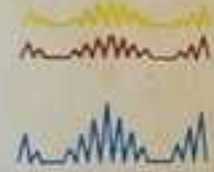
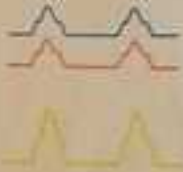
Parts No.	Parts Name
112	Bottom plate
113	Bottom plate set screw
114	Bottom plate packing
115	Lid screw
116	Lid screw packing
117	Lower shaft
118	Lower shaft crank
119	Lower shaft crank set screw
120	Lower shaft crank knock pin
121	Lower shaft front bushing
122	Lower shaft front bushing set screw
123	Lower shaft rear bushing
124	Lower shaft rear bushing set screw
125	Bevel gear (complete)
126	Bevel gear set screw
127	Driver shaft (complete)
128	Driver shaft bushing
129	Driver shaft bushing set screw
130	Thrust ring
131	Thrust ring set screw
132	Shuttle race (complete)
133	Shuttle race set screw
134	Bobbin case
135	Shuttle body
136	Feed forked connection

Parts No.	Parts Name
137	Feed forked slide block (complete)
138	Feed cam
139	Feed cam set screw
140	Feed regulator hinge screw
141	Feed regulator washer
142	Feed regulator hinge screw set
143	Feed regulator
144	Feed regulator pull spring
145	Feed dial shaft and nut
146	Feed dial rotating shaft
147	Feed dial
148	Stopper
149	Stopper spring
150	Feed dial indicator
151	Feed dial indicator set screw
152	Feed dial washer
153	Feed dial set nut
154	Feed plate
155	Feed plate set screw
156	Feed plate window
157	Feed knob
158	Feed knob set screw
159	Feed push button
160	Feed push button guide
161	Feed push button set screw

Parts No.	Parts Name
162	Feed rock shaft
163	Feed rock shaft screw center (Complete)
164	Feed rock crank
165	Feed forked connection hinge screw
166	Feed bar screw center (Complete)
167	Feed lifting rock crank (Complete)
168	Feed lifting cam
169	Feed lifting cam set screw
170	Drop feed spring holder
171	Drop feed spring set screw
172	Drop feed spring
173	Drop feed crank (Complete)
174	Height adjusting crank
175	Height adjusting crank set screw (Complete)
176	Height adjusting eccentric pin
177	Height adjusting eccentric pin set screw
178	Drop tapered pin (Complete)
179	Drop connecting rod (with nut)
180	Drop connecting rod split pin
181	Drop link lever
182	Drop link lever set screw
183	Drop lever (with shaft)
184	Drop lever spring

Parts No.	Parts Name
185	Drop feed indicator
186	Drop feed indicator set pin
187	Drop feed knob (with screw)
188	Feed bar
189	Feed dog
190	Feed dog set screw
191	Zig Zag plate (Complete)
192	Zig Zag plate set screw
193	Needle plate (Complete)
194	Needle plate set screw
195	Face plate (Complete)
196	Face plate hinge set screw
197	Face plate set spring
198	Face plate set spring set screw
199	Thread guide
200	Thread guide set screw
201	Lamp socket (Complete)
202	Lamp socket set screw
203	Light bulb
204	Separable socket (Male)
205	Lamp socket holder
206	Lamp socket holder set screw
207	Cord set plate (Large)
208	Cord set plate (Large)
209	Cord set plate (Small)

TWELVE EXTRA CAMS FOR ZIG-ZAG AND DECORATIVE SEWING

No. 13 (Double needle)   (Single needle)	No. 16  	No. 19  	No. 22  
No. 14  	No. 17  	No. 20  	No. 23  
No. 15  	No. 18  	No. 21  	No. 24  

These extra cams are available at extra cost.

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Wapler

Your Sewing Machine Dealer.

Parts No.	Parts Name
210	Cord set plate (Small) set screw
211	Cord set angle
212	Cord set angle set screw
213	Cord set angle set screw set nut
214	Switch
215	Rubber ring (Bed)
216	Upper lid
217	Upper lid holder
218	Upper lid holder set screw
219	Upper lid set screw (Large)
220	Upper lid set screw (Small)
221	Upper lid set screw washer
222	Spool pin (Complete)
223	Spool pin spring
224	Spool pin seat
225	Arm thread guide
226	Arm thread guide set nut
227	Arm thread guide washer
228	Tension stand
229	Tension stand set nut
230	Bobbin winder (Complete)
231	Bobbin winder set screw
232	Thread tension adjuster
233	Thread tension adjuster set screw
234	Plastic case for Cam

Parts No.	Parts Name
235	Cam (No. 1)
236	Cam (No. 2)
237	Cam (No. 3)
238	Cam (No. 4)
239	Cam (No. 5)
240	Cam (No. 6)
241	Cam (No. 7)
242	Cam (No. 8)
243	Cam (No. 9)
244	Cam (No. 10)
245	Cam (No. 11)
246	Cam (No. 12)
247	Accessory box
248	Straight sewing presser foot
249	Button sewing presser foot
250	Hemming presser foot (Large)
251	Hemming presser foot (Small)
252	Button hole sewing presser foot
253	Cording presser foot
254	Stitch ripper
255	Straight guide
256	Straight guide screw
257	Quilter
258	Folding presser foot
259	Zig Zag sewing presser foot

Parts No.	Parts Name
260	Straight sewing presser foot
261	Bobbin
262	Screw driver (Large)
263	Screw driver (Small)
264	Needle
265	Double needle
266	Oiler
267	Oil bottle
268	Embroidering spring